



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
REQUEST FOR FILING NATIONAL PHASE OF
PCT APPLICATION UNDER 35 U.S.C. 371 AND 37 CFR 1.494 OR 1.495

09/857124

To: Hon. Commissioner of Patents
Washington, D.C. 20231



00909

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)

Atty Dkt: P 281272 /150168.17/DV/mb

M# /Cient Ref.

From: Pillsbury Winthrop LLP, IP Group:

Date: June 1, 2001

This is a **REQUEST** for **FILING** a PCT/USA National Phase Application based on:

- | | | |
|---|--|--|
| 1. International Application
<u>PCT/CH98/00512</u>
country code | 2. International Filing Date
<u>2 December 1998</u>
Day MONTH Year | 3. Earliest Priority Date Claimed
<u>2 December 1998</u>
Day MONTH Year
(use item 2 if no earlier priority) |
|---|--|--|
4. Measured from the earliest priority date in item 3, this PCT/USA National Phase Application Request is being filed within:

(a) ☐ 20 months from above item 3 date (b) ☒ 30 months from above item 3 date,

(c) Therefore, the due date (unextendable) is June 2, 2001

5. Title of Invention MOBILE DEVICE AND METHOD FOR RECEIVING AND PROCESSING PROGRAM-
ACCOMPANYING DATA

6. Inventor(s) Rudolf RITTER

Applicant herewith submits the following under 35 U.S.C. 371 to effect filing:

☒ Please immediately start national examination procedures (35 U.S.C. 371 (f)).

7. ☐ A copy of the International Application as filed (35 U.S.C. 371(c)(2)) is transmitted herewith (file if in English but, if in foreign language, file only if not transmitted to PTO by the International Bureau) including:

a. ☐ Request;

b. ☐ Abstract;

c. pgs. Spec. and Claims;

d. sheet(s) Drawing which are ☐ informal ☐ formal of size ☐ A4 ☐ 11"

9. ☒ A copy of the International Application has been transmitted by the International Bureau.

10. A translation of the International Application into English (35 U.S.C. 371(c)(2))

a. ☒ is transmitted herewith including: (1) ☒ Request; (2) ☒ Abstract;

(3) 15 pgs. Spec. and Claims;

(4) 1 sheet(s) Drawing which are:

☐ informal ☒ formal of size ☒ A4 ☐ 11"

b. ☐ is not required, as the application was filed in English.

c. ☐ is not herewith, but will be filed when required by the forthcoming PTO Missing Requirements Notice per Rule 494(c) if box 4(a) is X'd or Rule 495(c) if box 4(b) is X'd;

d. ☒ Translation verification attached (not required now).

00857124-0001

RE: USA National Phase Filing of PCT /CH98/00512

11. ☒ Please see the attached Preliminary Amendment
12. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)), i.e., before 18th month from first priority date above in item 3, are transmitted herewith (file only if in English) including:
13. ☒ PCT Article 19 claim amendments (if any) have been transmitted by the International Bureau
14. ☒ Translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)), i.e., of claim amendments made before 18th month, is attached (required by 20th month from the date in item 3 if box 4(a) above is X'd, or 30th month if box 4(b) is X'd, or else amendments will be considered canceled).
15. **A declaration of the inventor** (35 U.S.C. 371(c)(4))
a. ☒ is submitted herewith ☒ Original ☐ Facsimile/Copy
b. ☐ is not herewith, but will be filed when required by the forthcoming PTO Missing Requirements Notice per Rule 494(c) if box 4(a) is X'd or Rule 495(c) if box 4(b) is X'd.
16. **An International Search Report (ISR):**
a. Was prepared by ☒ European Patent Office ☐ Japanese Patent Office ☐ Other
b. ☒ has been transmitted by the international Bureau to PTO.
c. ☒ copy herewith (2 pg(s).) ☒ plus Annex of family members (1 pg(s)).
17. **International Preliminary Examination Report (IPER):**
a. ☒ has been transmitted (if this letter is filed after 28 months from date in item 3) in English by the International Bureau with Annexes (if any) in original language.
b. ☐ copy herewith in English.
c.1 ☐ IPER Annex(es) in original language ("Annexes" are amendments made to claims/spec/drawings during Examination) including attached amended:
c.2 ☒ Specification/claim pages #2 claims #3
Dwg Sheets #
d. ☐ Translation of Annex(es) to IPER (required by 30th month due date, or else annexed amendments will be considered canceled).
18. **Information Disclosure Statement** including:
a. ☐ Attached Form PTO-1449 listing documents
b. ☐ Attached copies of documents listed on Form PTO-1449
c. ☒ A concise explanation of relevance of ISR references is given in the ISR.
19. ☒ **Assignment** document and Cover Sheet for recording are attached. Please mail the recorded assignment document back to the person whose signature, name and address appear at the end of this letter.
20. ☐ Copy of Power to IA agent.
21. ☐ **Drawings** (complete only if 8d or 10a(4) not completed): ___ sheet(s) per set: ☐ 1 set informal; ☐ Formal of size ☐ A4 ☐ 11"
22. Small Entity Status ☒ is **Not** claimed ☐ is claimed (pre-filing confirmation required)
22(a) ___ (No.) Small Entity Statement(s) enclosed (since 9/8/00 Small Entity Statements(s) not essential to make claim)
23. **Priority** is hereby claimed under 35 U.S.C. 119/365 based on the priority claim and the certified copy, both filed in the International Application during the international stage based on the filing in (country) ___ of:

	Application No.	Filing Date		Application No.	Filing Date
(1)	_____	_____	(2)	_____	_____
(3)	_____	_____	(4)	_____	_____
(5)	_____	_____	(6)	_____	_____

a. ☒ See Form PCT/IB/304 sent to US/DO with copy of priority documents. If copy has not been received, please proceed promptly to obtain same from the IB.

RE: USA National Phase Filing of PCT/CH98/00512

24. Attached:

25 Per Item 17.c2, **cancel original** pages #__, claims #__, Drawing Sheets #26. **Calculation of the U.S. National Fee (35 U.S.C. 371 (c)(1)) and other fees is as follows:**
Based on amended claim(s) per above item(s) ☐ 12, ☐ 14, ☐ 17, ☐ 25 (hit/ite)

Total Effective Claims	14	minus 20 =	0	x \$18/\$9	=	\$0	966/967
Independent Claims	2	minus 3 =	0	x \$80/\$40	=	\$0	964/965
If any proper (ignore improper) Multiple Dependent claim is present,				add \$270/\$135	=	+0	968/969

BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(4)): → → **BASIC FEE REQUIRED, NOW** → → →A. If country code letters in item 1 are **not** "US", "BR", "BB", "TT", "MX", "IL", "NZ", "IN" or "ZA" ↓

See item 16 re:

1. Search Report was <u>not</u> prepared by EPO or JPO -----	add \$1000/\$500	960/961
2. Search Report was prepared by EPO or JPO -----	add \$860/\$430	970/971
	+860	

SKIP B, C, D AND E UNLESS country code letters in item 1 are "US", "BR", "BB", "TT", "MX", "IL", "NZ", "IN" or "ZA" ↓

→ <input type="checkbox"/> B. If USPTO did not issue <u>both</u> International Search Report (ISR) <u>and</u> (if box 4(b) above is X'd) the International Examination Report (IPER), -----	add \$1000/\$500	+0	960/961
→ <input type="checkbox"/> C. If USPTO issued ISR but not IPER (or box 4(a) above is X'd), -----	add \$710/\$355	+0	958/959
→ <input type="checkbox"/> D. If USPTO issued IPER but IPER Sec. V boxes <u>not</u> <u>all</u> 3 YES, -----	add \$690/\$345	+0	956/957
→ <input type="checkbox"/> E. If international preliminary examination fee was paid to USPTO and Rules 492(a)(4) and 496(b) <u>satisfied</u> (IPER Sec. V <u>all</u> 3 boxes YES for <u>all</u> claims), -----	add \$100/\$50	+0	962/963

27. **SUBTOTAL =** \$86028. If Assignment box 19 above is X'd, add Assignment Recording fee of ---\$40 +40 (581)29. Attached is a check to cover the ----- **TOTAL FEES** \$900

Our Deposit Account No. 03-3975

Our Order No. 60237 281272

C#

M#



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CHARGE STATEMENT: The Commissioner is hereby authorized to charge any fee specifically authorized hereafter, or any missing or insufficient fee(s) filed, or asserted to be filed, or which should have been filed herewith or concerning any paper filed hereafter, and which may be required under Rules 16-18 and 492 (missing or insufficient fee only) now or hereafter relative to this application and the resulting Official document under Rule 20, or credit any overpayment, to our Account/Order Nos. shown above for which purpose a duplicate copy of this sheet is attached.

This CHARGE STATEMENT does not authorize charge of the issue fee until/unless an issue fee transmittal form is filedPillsbury Winthrop LLP
Intellectual Property GroupBy Atty: Dale S. LazarReg. No. 28872Sig: [Signature]Fax: (202) 822-0944
Tel: (202) 861-3527

Atty/Sec: DSL/JRH

NOTE: File in duplicate with 2 postcard receipts (PAT-103) & attachments.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re National Stage Application of PCT/CH98/00512 Confirmation No.: UNASSIGNED

Rudolf RITTER

Group Art Unit: UNASSIGNED

Appln. No.: NEW APPLICATION

Examiner: UNASSIGNED

Filed: June 1, 2001

Title: MOBILE DEVICE AND METHOD FOR RECEIVING AND PROCESSING
PROGRAM-ACCOMPANYING DATA

* * * * *

June 1, 2001

PRELIMINARY AMENDMENTHon. Commissioner of Patents
Washington, D.C. 20231

Sir:

Prior to examination of the above-identified application, please amend the application
as follows:

IN THE SPECIFICATION:

At the top of the first page, just under the title, insert

--This application is the National Phase of International Application

PCT/CH98/00512 filed December 2, 1998 which designated the U.S. and that International
Application was not published under PCT Article 21(2) in English.--

IN THE CLAIMS:

Please cancel claims 1-14 without prejudice or disclaimer and add new claims 15-28
as follows.

-- 15. A portable mobile device, comprising:

a radio receiver with which radio programs with program-accompanying digital data are receivable, at least certain of the received program-accompanying data containing location parameters;

a position locating module for determining the current geographic position of the mobile device; and

a filter module, connected to the radio receiver and to the position locating module which, on the basis of a current geographic position determined by the said position locating module, filters location-specific information from the said at least certain received program-accompanying data.

16. The mobile device according claim 15, wherein the said position locating module includes a satellite-based positioning system or a terrestrial positioning system, or the mobile device is a mobile radio device which is capable of communicating in a mobile network, and said position locating module is set up in such a way that it obtains position indications from said mobile network.

17. The mobile device according to claim 15, further comprising a memory module in which a user profile is stored, on the basis of which user profile said received program-accompanying data are filterable by said filter module.

18. The mobile device according to claim 15, further comprising a display on which filtered program-accompanying data are displayable, including operating elements by means of which filtered program-accompanying data selectable and editable.

19. The mobile device according to claim 15, further comprising a communications module, which transmits selected, filtered program-accompanying data to a service center.

20. The mobile device according to claim 15, wherein said mobile device includes a communications module which activates a resource in the Internet, addressed through a URL address obtained in the said received program-accompanying data.

21. The mobile device according to claim 15, wherein said mobile device includes a processing module in which executable program data files, contained in the said received program accompanying data, are executable.

22. A method for receiving and processing program-accompanying digital data which are transmitted by a radio transmitter and at least certain of which include location parameters, said method comprising:

receiving said program-accompanying data by a portable mobile device by means of a radio receiver; and

determining the current geographic position of said mobile device by means of a position locating module, wherein

said mobile device filters, by means of a filter module, connected to the radio receiver and to the position locating module, location-specific information from the said received program-accompanying data on the basis of the determined current geographic position.

23. The method according to claim 22, wherein said determining of said current position is performed by a satellite-based positioning system or a terrestrial positioning system, or the said position locating module obtains indications about the current position from a mobile radio network.

24. The method according to claims 22, wherein said received program-accompanying data are filtered by the said filter module on the basis of a user profile stored in a memory module of the said mobile device.

25. The method according to claims 22, wherein filtered program-accompanying data are displayed on a display of the mobile device, and the filtered program-accompanying data are selected by means of operating elements of the said mobile device.

26. The method according to claim 22, wherein selected, filtered program-accompanying data are transmitted to a service center by a communications module of the said mobile device.

27. The method according to claims 22, wherein at least certain of said received program-accompanying data contain a URL address, and wherein a resource in the Internet, addressed through a selected said URL address, is activated by a communications module of the said mobile device.

28. The method according to claim 22, wherein at least certain of said received program-accompanying data contain executable program data files, and wherein a selected said executable program data file is executed in a processing module of the said mobile device. --

REMARKS

By this Preliminary Amendment, claims 1-14 are being canceled without prejudice or disclaimer. New claims 15-28 are being added. No new matter has been added. Accordingly, an early action on the merits is earnestly solicited.

Respectfully submitted,

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Mobile Device and Method for Receiving and Processing Program-accompanying Data

This invention relates to a mobile device and a method for receiving and processing program-accompanying data. In particular, this invention relates to
5 a mobile device and a method for receiving and processing program-accompanying digital data which are transmitted by a radio transmitter and at least certain of which contain location parameters.

Devices with a radio or television receiver for receiving program-accompanying data and with a display for showing received program-
10 accompanying data are known and are available on the market. Such devices are available, in particular, for DAB digital radio systems (Digital Audio Broadcasting) or for other radio systems such as FM-SWIFT or FM-DARC, or for television receivers with teletext, which typically all operate unidirectionally. Although information can be received and displayed with such devices, a user
15 cannot receive information, however, in a targeted way, relating to subjects selected by him alone and/or information relevant for his current location only.

Described in the European patent application EP 0 259 717 is a method in which program-accompanying data are provided with content-specific codes and are transmitted, for advertising purposes. A user can receive information
20 on one or more subject areas in a targeted way, for example real estate advertising, by programming a portable receiver with the corresponding codes. The method described in EP 0 259 717 offers a user no possibility, however, of receiving data, relating to his current location, with his portable receiver in a targeted way.

Proposed in the patent application DE 196 40 735 is a telematic device for installation in the standardized space on the dashboard of motor vehicles in that an auto radio with an RDS module, a radio telephone as well as a location and navigation system are disposed in a housing. The telematic device described in DE 196 40 735 transmits position indications and destination data
30 to an exchange, which calculates a travel route and transmits this travel route to the telematic device for visual display on a display. The telematic device according to DE 196 40 735 can be provided moreover with a CD ROM and a

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digital map stored thereon, so that the current vehicle position can be linked and displayed on the digital map on the display. The travel routes calculated by the exchange can likewise be displayed on the digital map on the display in the telematic device according to DE196 40 735. The telematic device
5 according to DE196 40 735 can furthermore be set up in such a way that optimal travel routes are calculated on the basis of the current traffic situation which is received in each case over various location-specific traffic report channels.

Described in the patent publication US 5,432,542 is a system and a
10 method that make it possible to receive in a targeted way location-specific reports which are broadcast over television or radio channels. According to the teaching of US 5,432,542, one or more codes with places of interest for the user are programmed by the user into a terminal which is connected to the corresponding television or radio receiver, so that the received location-specific
15 reports can be filtered in the terminal according to these programmed codes.

It is the object of this invention to propose a new mobile device and a new method of receiving and processing program-accompanying data which make it possible to receive and to process location-specific information in a targeted way.

20 This object is achieved, according to the present invention, in particular through the elements of the independent claims. Further preferred embodiments follow moreover from the dependent claims and from the description.

This object is achieved in particular by the invention in that a mobile device, for example a mobile radio telephone, a palmtop or a laptop computer, comprising a radio receiver, that can receive radio programs with program-accompanying digital data, at least certain of the received program-accompanying data including location parameters, includes a position locating module and a filter module, the filter module being able to filter location-specific information from the received program-accompanying data on the basis of a current position determined by the position locating module. This has the advantage that a user of this mobile device can be supplied with location-specific information in a targeted way.

In various embodiment variants, the position locating module includes a satellite-based positioning system, for example a receiver for the Global Positioning System (GPS), or a terrestrial positioning system, or it can obtain position indications from a mobile network, for example a GSM or UMTS network.

The mobile device preferably includes a memory module in which a user profile can be stored, on the basis of which user profile received program-accompanying data can be filtered by the said filter module. This has the advantage that the user of the mobile device can filter out certain information in a targeted way out of the received program-accompanying data, it being possible to implement this in combination with the filtering of location-specific information. The user can define, for example in the user profile, certain categories or subject areas in which he is interested, in a targeted way, so that location-specific information on these categories or subject areas can be filtered out for him from the received program-accompanying data. It can also be provided for that the area to be taken into consideration in the filtering of location-specific information can be defined in the user profile, for example the radius around the current location.

The mobile device preferably includes a display on which filtered program-accompanying data can be displayed.

The mobile device preferably includes operating elements by means of which filtered program-accompanying data can be selected and edited.

The mobile device preferably includes a communications module by means of which selected, filtered program-accompanying data can be

transmitted to a service center, for example in special short messages such as SMS (Short Message Service) or USSD (Unstructured Supplementary Services Data) messages via a GSM or UMTS network, the service center being, for example, a short message service center (SMSC). This has the advantage that
 5 multidirectional communication can be thereby achieved, which is initiated by the unidirectional transmission of program-accompanying data.

In an embodiment variant, at least certain of the received program-accompanying data contain an order number, which includes a product identification and an associated supplier identification, and the said mobile
 10 device includes a communications module, by means of which a selected order number is sent to the supplier identified by the said order number, the order number being transmitted to a service center, for example in special short messages such as SMS (Short Message Services) or USSD (Unstructured Supplementary Services Data) via a GSM or UMTS network, the service center
 15 being, for example, a short message service center (SMSC), in which service center the order number is linked with user identification data of the user of the said mobile device, and the linked data are transmitted to the said supplier.

In an embodiment variant, at least certain of the received program-accompanying data contain an URL address, and the mobile device includes a
 20 communications module, by means of which a resource in the Internet addressed by means of the URL address can be activated.

In an embodiment variant, at least certain of the received program-accompanying data contain executable program data files which can be executed in a processing module of the mobile device.

25 One embodiment of the present invention will be described in the following with reference to an example. The example of the embodiment is illustrated by the following attached figures:

Figure 1 shows an overall diagram with a radio transmitter and a mobile device, which device is connected to a mobile network, to which a service
 30 center with access to service providers is linked.

Figure 2 shows a block diagram of a mobile device with a radio receiver, a position locating module, a filter module, a communications module, a processing module, a memory module, a display, and operating elements.

In the following embodiment example, the reference numeral 1 refers to a radio transmitter, which can transmit program-accompanying data, for example a transmitter of a national or local radio station, or a transmitter for covering a narrowly restricted geographic area, for example trade fair grounds or exhibition premises. The radio transmitter 1 is, for example, an FM transmitter, which can also transmit, in particular, program-accompanying digital data. The transmission of program-accompanying data in addition to the radio program is used above all in the DAB (Digital Audio Broadcasting) radio system or in other radio systems such as FM-SWIFT or FM-DARC. The DAB technology, for example, makes it possible to transmit both radio programs and program-accompanying services (Program Associated Data, PAD). For example, transmission can be by means of DAB data in eight addressable channels with a capacity of 150 kbits each, the addressing of these channels making it possible to transmit data to a separately addressed receiver, to a defined group of several receivers (multicast) or to all receivers (broadcast).

According to the present invention, at least certain of the program-accompanying data transmitted by the radio receiver 1 include location parameters defining a geographic position and/or area for which the respective program-accompanying data are relevant and/or interesting. For example, the location parameters include geographic coordinates defining a particular stand on the grounds of a trade fair or an exhibition, or relating to a particular point of sale and/or sales agent for products and/or services.

As indicated by the unidirectional arrow 2, emerging from the radio transmitter 1, the program-accompanying digital data, for example advertising information on products and/or services or executable program data files, together with any possible audio programs, are disseminated by the transmitter 1 and are received by a mobile device 3 with a corresponding radio receiver 38 (see Figure 2), for instance. The radio receiver 38 is, for example, a DAB radio receiver or a radio receiver for receiving program-accompanying data according to FM-SWIFT, FM-DARC or another process.

In a possible embodiment, a transmitted and received audio signal is passed on by the radio receiver 38 to an amplifier (not shown), for example an audio amplifier known to one skilled in the art, is amplified thereby, and the

amplified electrical signal is applied to one or more loudspeakers (not shown) or to a connecting jack (not shown) for connecting headphones.

Although the embodiment example described relates to a radio transmitter and a radio receiver, it should be mentioned at the very beginning that, in another embodiment variant, instead of a radio transmitter, which transmits audio programs with program-accompanying data, a television transmitter can be used which transmits television programs with program-accompanying data, for example teletext information, which are received by a corresponding television receiver 38, it being possible for the video program to be displayed, for example, on a television screen 31 of a mobile device 3, for example a conventional electronic picture tube, an LCD or plasma display, or via a virtual retina display.

As shown in Figure 2, the radio receiver 38 passes on the received program-accompanying digital data, via a schematically indicated connection, to a filter module 37.

According to the present invention, the mobile device 3 has in addition a position locating module 39, which can determine the current geographic position (of the mobile device 3). A determination of position can be carried out, for example, periodically or upon demand, for example upon request of another module of the mobile device 3, for example the filter module 37, or upon request of the user of the mobile device, who enters this as a command by means of operating elements 32, for example, after which the determined current position is displayed for him on a display 31 of the mobile device 3. The position locating module 39 operates, for example, according to a known satellite-based positioning system, in particular the Differential Global Positioning System (GPS), and correspondingly includes a known GPS receiver. In an embodiment variant, the position locating module 39 operates according to a terrestrial positioning system, or it obtains position indications from a mobile network 4. In the latter case, the mobile device 3 is a mobile radio device, which includes a communications module 34 in order to communicate in a mobile network 4, for example a GSM or UMTS network.

As shown in Figure 2, the position locating module 39 passes on the determined current position to the filter module 37 via a schematically shown connection.

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The filter module 37 is a programmed software module, for example, which is implemented in a processor of the mobile device 3 and is stored in a program memory of the mobile device 3. In an embodiment variant, the processor and the program memory for storing and implementing the filter module 37 are located on a chipcard 33 of the mobile device 3, for example an identification card 33 of the mobile device 3, for example a SIM (Subscriber Identification Module) card. The filter module 37 accepts the received program-accompanying data from the radio receiver 38 as well as the determined current position from the position locating module 39, and compares the location parameters contained in the program-accompanying data, for example geographic coordinates, with the current position. If the location parameters and the current position agree, the respective program-accompanying data can be passed on as location-specific information to a processing module 36. There is agreement if, for example, the geographic coordinates of the received location parameters and the determined current position are identical or their difference is within a predefined range that can also be set by the user in a user profile, which user profile will be described more closely below. Program-accompanying data, which contain no location parameters or whose location parameters do not coincide with the current position can be ignored by the filter module 37, for example.

The filter function of the filter module 37 can also be determined in addition by parameters of a user profile stored in a memory module 35. The user profile 35 is, for example, a table with key words, which define, for example, particular categories or subject areas of information in which the respective user is interested. The user profile 35 can also be contained, for example, in the information entered by the user which influences the filtering of location-specific information, for example, the user can define a geographic area, for example a geographic radius which is supposed to be taken into consideration by the filter module 37 in filtering location-specific information depending upon the current position, or the user can switch off the filtering of location-specific information, for example. The user profile 35 can be set up by the user, for example, by means of a corresponding software program in the processing module 36, this software program being able to receive commands entered by the user by means of the operating elements 32 and being able to show entered values, function menus and the contents of the user profile 35 on

a display 31 of the mobile device 3. The user profile 35 can also be integrated into an executable program applet, for instance a Java applet, and can be set up externally by the user, for example, and edited, e.g. in a personal computer, an externally defined and/or edited applet being able to be loaded into the mobile device 3, for instance by means of special short messages, e.g. USSD or SMS short messages. As will be described later on, the said processing module 36 includes moreover further software programs and software functions, and is executed on a processor of the mobile device 3 and is stored in a program memory of the mobile device 3. In an embodiment variant, the processor and the program memory for storing and implementing the processing module 36 are located on a chipcard 33 of the mobile device 3, for instance an identification card 33 of the mobile device 3, e.g. an SIM card.

The processing module 36, by means of a software function, receives the location-specific information filtered by the filter module 37, which are moreover limited by the filter module to the information areas set up in the user profile 35, and shows them on the display 31 of the mobile device 3, for example. Corresponding software functions in the processing module 36 receive commands, entered by the user by means of operating elements 32, for browsing through, selecting and/or editing of the displayed, filtered information, and respectively update the information shown on the display 31 corresponding to the entered commands. Depending upon the contents of the filtered program-accompanying data, the processing module 36 shows a menu for data selected by the user on the display 31 with possible further functions for the respective data, or, if only one particular function is up for selection, requires from the user a confirmation as to whether the respective function should be carried out for the selected data.

In particular, received and filtered location-specific data can be passed on, for example by the processing module 36, to a communications module 34 of the mobile device for transmission to a service center 5. The communications module 34 includes, for example, known components in order to communicate in a mobile network 4, for instance a GSM or UMTS network, and in order to transmit in this mobile network 4 special short messages, e.g. SMS or USSD messages. The service center 5 comprises, for example, a known short message service center (SMSC), which is linked to the mobile network 4 and can receive and process short messages transmitted via this

mobile network 4. This makes possible, for example, an order or job processing between the communications module 34 and the service center 5 according to the SICAP method, described, inter alia, in the patent publication EP 0 689 368.

- 5 In a first application example, the location-specific data contain order numbers for products, services and/or information requests, which include a product identification of the respective products, services or information requests and an associated supplier identification for the respective supplier or service provider. The location-specific order numbers can be used in an
- 10 ordering method according to the published patent application WO 98/28900, the order number being transmitted by the communications module 34, as described above, to the service center 5, where the order number is linked to identification data, which relate to the user of the mobile device 3 and are obtained from a network database accessible to the service center 5, and being
- 15 passed on to the supplier 8, or respectively the service provider 8, indicated in the order number. Before transmission of the order number by the communications module 34 to the service center 5, still further information, of significance for the order, can be entered by the user, if applicable, for example the number of items to be ordered and/or indications about payment and mode
- 20 of payment, and can be transmitted to the service center 5 by the communications module 34 together with the order number. The passing on of the order data by the service center 5 to the service provider 8 can take place, for example, over a fixed network 9, e.g. the public switched telephone network (PSTN) or it can take place via an Internet vendor 6 over the Internet 7.
- 25 Ordered products and information, such as, for example, executable programs, e.g. Java applets, encrypted admission tokens, for instance for events and functions with automatic access control, as well as requested data from a database can be transmitted by the service provider (supplier) 8, for example directly via the mobile network 4, to the mobile device 3, and correspondingly
- 30 executed there, stored, or respectively displayed. A corresponding billing of the obtained products, information or services can be carried out via an account of the respective user, this account being located, for example, on a chipcard 33 of the mobile device 3 and containing, for example, a prepaid amount.

In a second application example, the location-specific data contain URL (Universal Resource Locator) addresses, which can be used by the communications module 34 to activate a resource 8 in the Internet 7 addressed through the URL address. This is, for example, a particular web page 8 or a particular home page 8 in the Internet, which is activated by the communications module 34 via the service center 5 and via an Internet vendor 6. The service center 5 includes, for example, a short message service center (SMSC), the respective URL address being transmitted together with corresponding instructions, as described above according to the SICAP method, for example, by the mobile device 3 to the service center 5, and from there through a special service by means of the Internet Protocol (IP) via an Internet vendor 6 to the addressed resource 8 in the Internet 7. The service center 5 can be connected, for example, to the signalling system of the mobile network 4, also by means of suitable components, for instance by means of a Home Location Register (HLR) to the signalling system number 7 (SS7), and have moreover suitable gateway and/or converting functions to activate the resource 8 in the Internet 7 addressed through the URL address by means of the Internet Protocol (IP) via an Internet vendor 6 protocol (IP). The activated resource 8 in the Internet 7 can be shown on the display 31 of the mobile device by means of suitable browser functions of the processing module 36, and can be navigated by the user of the mobile device 3 via the operating elements 32.

In a third application example, the location-specific data contain executable program data files, for example Java applets, which can be executed in the processing module 36 of the mobile device 3. The user of the mobile device can select, for example, via the above-mentioned menu functions, whether a received executable program data file is to be executed right away or whether it is to be just stored in the memory module 35 and is to be executed at a later point in time.

Depending upon the degree of confidentiality of the program-accompanying data, these data can be transmitted, for example with the aid of security services, by the radio transmitter 1 to the mobile device 3, respectively by the mobile device 3 to the service center 5; for this purpose the TTP (Trusted Third Party) method or a PTP (Point-To-Point) method can be used, for instance.

As already indicated above, the received and filtered location-specific data can contain, for example, advertising information concerning a particular stand on the grounds of a trade fair or exhibition premises, or can relate to a particular point of sale and/or sales agent for products and/or services, it being possible for the advertising information to also include described order numbers, for instance. In a further application, the location-specific information can also contain explanations and comments relating to items on exhibition in a museum, given in addition to acoustical information of the audio program or as a substitution for hearing-impaired persons. In a multistoried building, moreover, it can make sense for the program-accompanying data transmitted by the radio transmitter 1 to also include an indication of elevation in the location parameters, and for the position locating module 39 to also include a suitable elevation measuring device, in addition to the described position locating means, in order to also determine the current elevation, so that the filter module 37 described above can also take into consideration the current elevation for filtering location-specific information from the received program-accompanying data. The received and filtered location-specific data can of course also contain other location-specific information, such as, for instance, location-dependent fees, traffic information, orientation indications, for example for road networks and/or vacant parking spaces, weather data, timetables and connection times for public transportation, and much more.

The possibilities for application of the invention described as well as the contents and uses of location-specific information are almost limitless, and in no way restricted just to the examples given.

It should also be mentioned here that the specially equipped mobile device 3, as has been described here, can be achieved in a single comprehensive housing, but is can also be achieved in such a way that it includes a plurality of housings separable from each other, each containing certain modules of the described mobile device, which modules are removably connected to one another via interfaces installed in these housings. In one embodiment example, a first housing includes, for instance, such modules as are contained in a conventional mobile device, e.g. a communications module 34, a display 31 and operating elements 32, whereas a second housing includes modules such as a radio receiver 38 for receiving program-accompanying data, a position locating module 39 and a filter module 37. The

above-mentioned interface is, for instance, a suitable interface with contacts or a contactless interface, e.g. an inductive interface, an infrared interface, or in particular a high frequency interface, for instance a so-called "bluetooth" interface, which operates, for example, at 2.4 GHz. One skilled in the art will
5 understand that there are different possibilities for configuration of such modules.

Besides specially equipped mobile devices 3, as have been described here, also various suitable extension modules can be sold and/or rented to an interested user, which extension modules have at least certain of the described
10 special function modules and which can be connected to conventional mobile devices, or for an interested user, who has a mobile device with the suitable hardware modules, suitable software modules for execution of the described method could be loaded into the memory module of this mobile device, in exchange for cash payment.

Claims

1. A portable mobile device (3), which includes a radio receiver (38), by means of which radio programs with program-accompanying digital data are receivable, at least certain of the received program-accompanying data
5 containing location parameters, and which mobile device (3) includes a position locating module (39) for determining the current geographic position of the mobile device (3), wherein

includes a filter module (37), connected to the radio receiver (38) and to the position locating module (39), by means of which, on the basis of a current
10 geographic position determined by the said position locating module (39), location-specific information are filterable from the said at least certain received program-accompanying data.

2. The mobile device (3) according to the preceding claim, wherein the said position locating module (39) includes a satellite-based positioning system
15 or a terrestrial positioning system, or the mobile device is a mobile radio device which is capable of communicating in a mobile network (4), and the said position locating module (3) is set up in such a way that it obtains position indications from the said mobile network (4).

3. The mobile device (3) according to one of the preceding claims,
20 wherein it includes a memory module (35) in which a user profile is stored, on the basis of which user profile said received program-accompanying data are filterable by the said filter module (37).

4. The mobile device (3) according to one of the preceding claims, wherein it includes a display (31) on which filtered program-accompanying data
25 are displayable, and wherein it includes operating elements (32) by means of which filtered program-accompanying data selectable and editable.

5. The mobile device (3) according to one of the preceding claims, wherein it includes a communications module (34), by means of which selected, filtered program-accompanying data are transmittable to a service
30 center (5).

6. The mobile device (3) according to one of the preceding claims,

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wherein the said mobile device (3) includes a communications module (34) by means of which a resource (8) in the Internet (7), addressed through a URL address obtained in the said received program-accompanying data, is able to be activated.

- 5 7. The mobile device (3) according to one of the preceding claims, wherein the said mobile device (3) includes a processing module (36) in which executable program data files, contained in the said received program-accompanying data, are executable.

8. A method for receiving and processing program-accompanying digital
10 data which are transmitted by a radio transmitter (1) and at least certain of which include location parameters, in which method said program-accompanying data are received by a portable mobile device (3) by means of a radio receiver (38), and in which method the said mobile device (3) determines its current geographic position by means of a position locating module (39),
15 wherein

the said mobile device (3) filters, by means of a filter module (37), connected to the radio receiver (38) and to the position locating module (39), location-specific information from the said received program-accompanying data on the basis of the determined current geographic position.

- 20 9. The method according to the preceding claim, wherein the said position locating module (39) determines the said current position by means of a satellite-based positioning system or a terrestrial positioning system, or the said position locating module (39) obtains indications about the current position from a mobile radio network (4)..

- 25 10. The method according to one of the claims 8 or 9, wherein said received program-accompanying data are filtered by the said filter module (37) on the basis of a user profile stored in a memory module (35) of the said mobile device (3).

- 30 11. The method according to one of the claims 8 to 10, wherein filtered program-accompanying data are displayed on a display (31) of the mobile

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device (3), and the filtered program-accompanying data are selected by means of operating elements (32) of the said mobile device (3).

12. The method according to one of the claims 8 to 11, wherein selected, filtered program-accompanying data are transmitted to a service center (5) by means of a communications module (34) of the said mobile device (3).

13. The method according to one of the claims 8 to 12, wherein at least certain of the said received program-accompanying data contain a URL address, and wherein a resource (8) in the Internet (7), addressed through a selected said URL address, is activated by a communications module (34) of the said mobile device (3).

14. The method according to one of the claims 8 to 13, wherein at least certain of the said received program-accompanying data contain executable program data files, and wherein a selected said executable program data file is executed in a processing module (36) of the said mobile device (3).

Abstract

Mobile device (3) and method for receiving and processing program-
accompanying digital data, which are transmitted by a radio transmitter (1), for
5 example a DAB transmitter, and of which at least certain comprise location
parameters. The mobile device (3) includes a radio receiver (38), which can
receive radio programs with program-accompanying digital data, and a position
locating module (39) for establishing the current position, for example a GPS
receiver. The mobile device (3) further comprises a filter module (37), by
10 means of which, on the basis of the current position, determined by the said
position locating module (39), location-specific information can be filtered from
the received program-accompanying data, which contain, for example, order
numbers, URL addresses or executable program data files. The received
program-accompanying data can be filtered moreover by the said filter module
15 (37) on the basis of a user profile (35) stored in the mobile device (3).
Location-specific data can be shown on a display (31) of the mobile device (3),
can be selected by the user by means of operating elements (32) of the mobile
device (3), can be edited and can be further processed through the mobile
device (3).

20

25

(Figure 1)

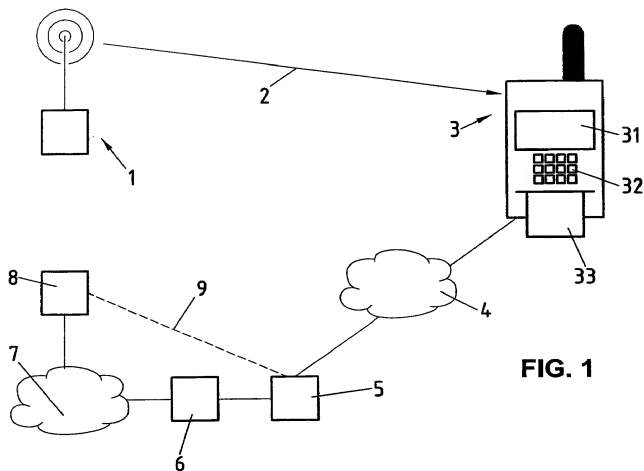


FIG. 1

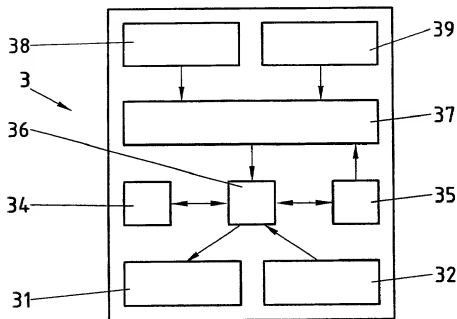


FIG. 2

FOR UTILITY/DESIGN
CIP/PCT NATIONAL/PLANT
ORIGINAL/SUBSTITUTE/SUPPLEMENTAL
DECLARATIONS

RULE 63 (37 C.F.R. 1.63)
DECLARATION AND POWER OF ATTORNEY
FOR PATENT APPLICATION
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PW
FORM

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name, and I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the INVENTION ENTITLED

Mobile Device and Method for Receiving and Processing Program-accompanying Data
the specification of which (CHECK applicable BOX(ES))

☒ XX is attached hereto.
→ ☐ was filed on _____ as U.S. Application No. _____
→ ☒ was filed on PCT International Application No. PCT/CH 98 /00512 on 2 December 1998
and (if applicable to U.S. or PCT application) was amended on _____

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56. Except as noted below, I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International Application which designated at least one other country than the United States, listed below and have also identified below any foreign application for patent or inventor's certificate, or PCT International Application, filed by me or my assignee disclosing the subject matter claimed in this application and having a filing date (1) before that of the application on which priority is claimed, or (2) if no priority claimed, before the filing date of this application:

PRIOR FOREIGN APPLICATION(S) Number	Country	Day/MONTH/Year Filed	Date first Laid- open or Published	Date Patented or Granted	Priority NOT Claimed
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If more prior foreign applications, X box at bottom and continue on attached page.

Except as noted below, I hereby claim domestic priority benefit under 35 U.S.C. 119(e) or 365(c) of the indicated United States applications listed below and PCT international applications listed above or below and, if this is a continuation-in-part (CIP) application, insofar as the subject matter disclosed and claimed in this application is in addition to that disclosed in such prior applications, I acknowledge the duty to disclose all information known to me to be material to patentability as defined in 37 C.F.R. 1.56 which became available between the filing date of each such prior application and the national or PCT international filing date of this application:

PRIOR U.S. PROVISIONAL, NONPROVISIONAL AND/OR PCT APPLICATION(S)	Status	Priority NOT Claimed
Application No. (series code/serial no.) Day/MONTH/Year Filed	pending, abandoned, patented	

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

And I hereby appoint Pillsbury Winthrop LLP, Intellectual Property Group, telephone number (202) 861-3000 (to whom all communications are to be directed), and persons of that firm who are associated with USPTO Customer No. 909 (see below label) individually and collectively my attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith and with the resulting patent, and I hereby authorize them to delete from that Customer No. names of persons no longer with their firm, to add new persons of their firm to that Customer No., and to act and rely on instructions from and communicate directly with the person/assignee/attorney/firm/ organization who/which first sends/sent this case to them and by whom/which I hereby declare that I have consented after full disclosure to be represented unless/until I instruct the above Firm and/or an attorney of that Firm in writing to the contrary.



00909

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- ☐ FOR ADDITIONAL INVENTORS see attached page.
☐ See additional foreign priorities on attached page (incorporated herein by reference).

Atty. Dkt. No. P

(M#)